

ASN (RDA) CHIEF ENGINEER

Naval Collaborative Engineering Environment Applications

28-30 June 2005

Ms. Barbara Vaughn
RDA CHENG NCEE Director

Approved for public release; distribution is unlimited



Topics

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- CHENG Organization
- NCEE Purpose
- NCEE Functions
- NCEE Ongoing Activities



“We need to create a high performing organization that collaborates across the entire Navy community.”

Secretary John Young

“To foster cross-organizational collaboration for SE, the SE community needs standard tools and web-based means to enable collaboration...”

OSD Town Meeting Recommendation



Purpose of NCEE Directorate

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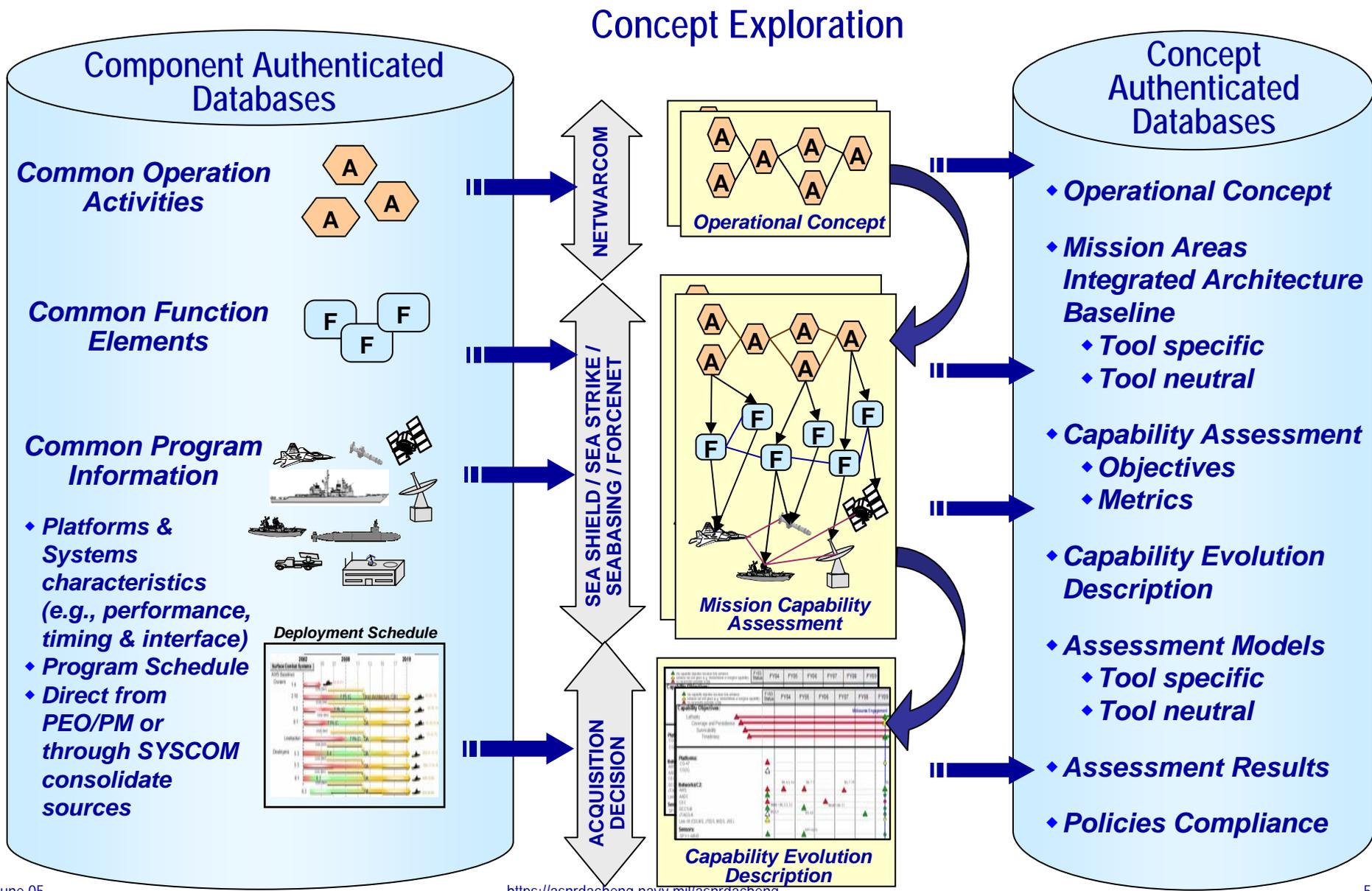
- To provide an integrated digital environment that:
 - Enhances the cooperation and exchange of data, information, and knowledge among Naval stakeholders engaged in activities directed toward assuring integrated and interoperable Naval force systems.
 - Enables the integration and interoperability of Naval force systems across the spectrum of the Naval acquisition process.

Based on Both E-Business and E-Systems Engineering Capabilities



Notional Operational Concept

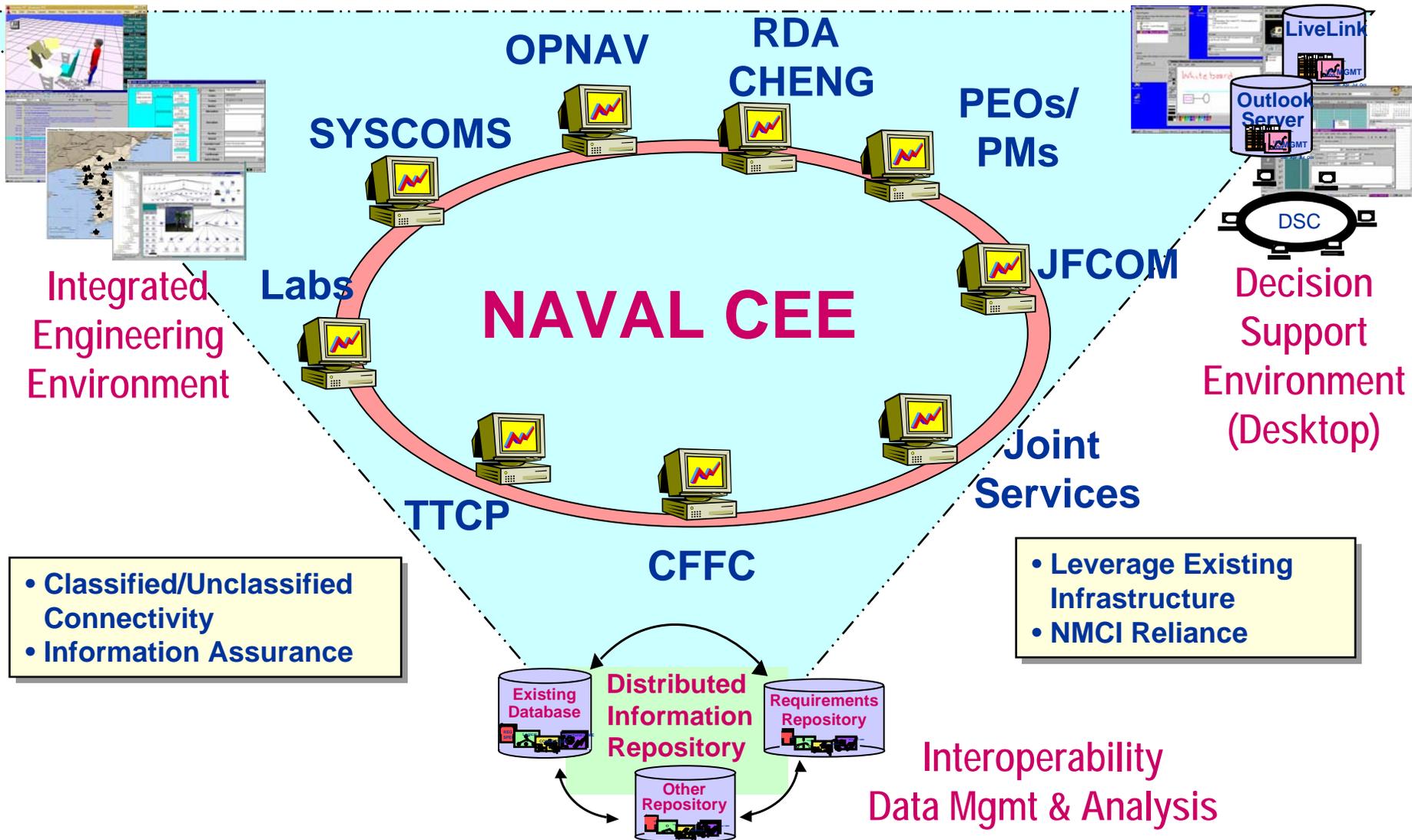
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Naval Collaborative Engineering Environment

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Classified and Unclassified Connectivity to Enable Stakeholder Collaboration



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NCEE Website and Workspace Applications



FORCENet Implementation Tool Workspace

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Individual or Nested Workspaces For Workgroups

Address: <https://workspace.asnr Dacheng.navy.mil/FIT/default.aspx>

UNCLASSIFIED

Home Documents and Lists Create Site Settings Help

FIT Workspace Home

FIT (FORCENet Implementation Tool) collaborative workspace.

Announcements

Shared Documents

Type	Name	Modified By
Document	FINAL FIT Fn Eng Con	Marlen Zigler
Folder	NCEE TEMS	Jessica Foster

Events

Date/Time	Event
6/27/2005 8:30 AM	Monday FIT Synch Meeting Monday FIT Synch Meeting -- get details from Battle Rhythm
6/28/2005 5:00 AM	FORCENet Engineering Conference FIT will have member demos all three days. June 30, FIT track will involve an entire day of presentations.
6/29/2005 9:00 AM	FIBL Update Meeting FIBL development group reports to FIT project office on tasking status, issues, schedule and budget for FIBL project.
6/29/2005 1:30 PM	Wednesday FIT Synch Meeting Wednesday FIT Synch Meeting: Team members report on progress made, get questions answered, and tackle pressing issues as a group (if needed).
6/29/2005 6:30 PM	Dinner With Barbara Vaughn and Cheryl Walton
7/4/2005 12:00 AM	Tom on Leave
7/4/2005 12:00 AM	Jessica on Leave
7/4/2005 12:00 AM	Marlen on Leave
7/4/2005 8:30 AM	Monday FIT Synch Meeting Monday FIT Synch Meeting -- get details from Battle Rhythm
7/6/2005 9:00 AM	FIBL Update Meeting FIBL development group reports to FIT project office on tasking status, issues, schedule and budget for FIBL project.

(More Events...)

Tasks - (Series Items)

Access denied. You do not have permission to perform this action or access this resource.

Links

- FORCENet Implementation Baseline (FIBL)
- DoD Architecture Repository (DARS)
- DoN Application & Database Management System (DADMS)
- FORCENet Innovation Research Enterprise (FIRE)
- Marine Corps Architecture Support Environment (MCASE)
- SHIPMAIN
- Naval Tool for Interoperability Risk Assessment (NTIRA)
- Naval Collaborative Engineering Environment (NCEE)
- FIBL Workspace

▢ Add new link

Team Informing

Documents Sharing

Events Tracking

Tasks Assigning & Tracking

User Access Controlling

References Linking



ASN RDA CHENG Tools Access

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Address <https://asnrdacheng.navy.mil/toolbox.htm> Go Links

This is an official U.S. Navy web site

 **NAVAL COLLABORATIVE ENGINEERING ENVIRONMENT** Home | Toolbox | Sitemap | Feedback

Toolbox

- Home
- Feedback
- Account Request
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- Privacy/Security
- Section 508 Info
- PKI Cert Info
- External Links
- Site Map

NCEE Toolbox

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 Associated Links	 Authoritative Databases
Change Your Workspaces Password	 Conference Room Calendars
CORE, DOORS, and other Engineering and Collaboration Tools	 Facilitate
FAQ Frequently Asked Questions (FAQ)	 InterchangeSE
 NetMeeting (No longer available - click for details)	 Phone Book
QuickStart Instructions	 Video Services
Workspace Tips	



Integrated Naval Collaborative Capabilities

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- Unite existing collaborative capabilities under a domain independent framework
 - Website and Workspaces
 - Tools and applications sharing
- Jointly define a long-term strategy for naval-wide collaborative capabilities



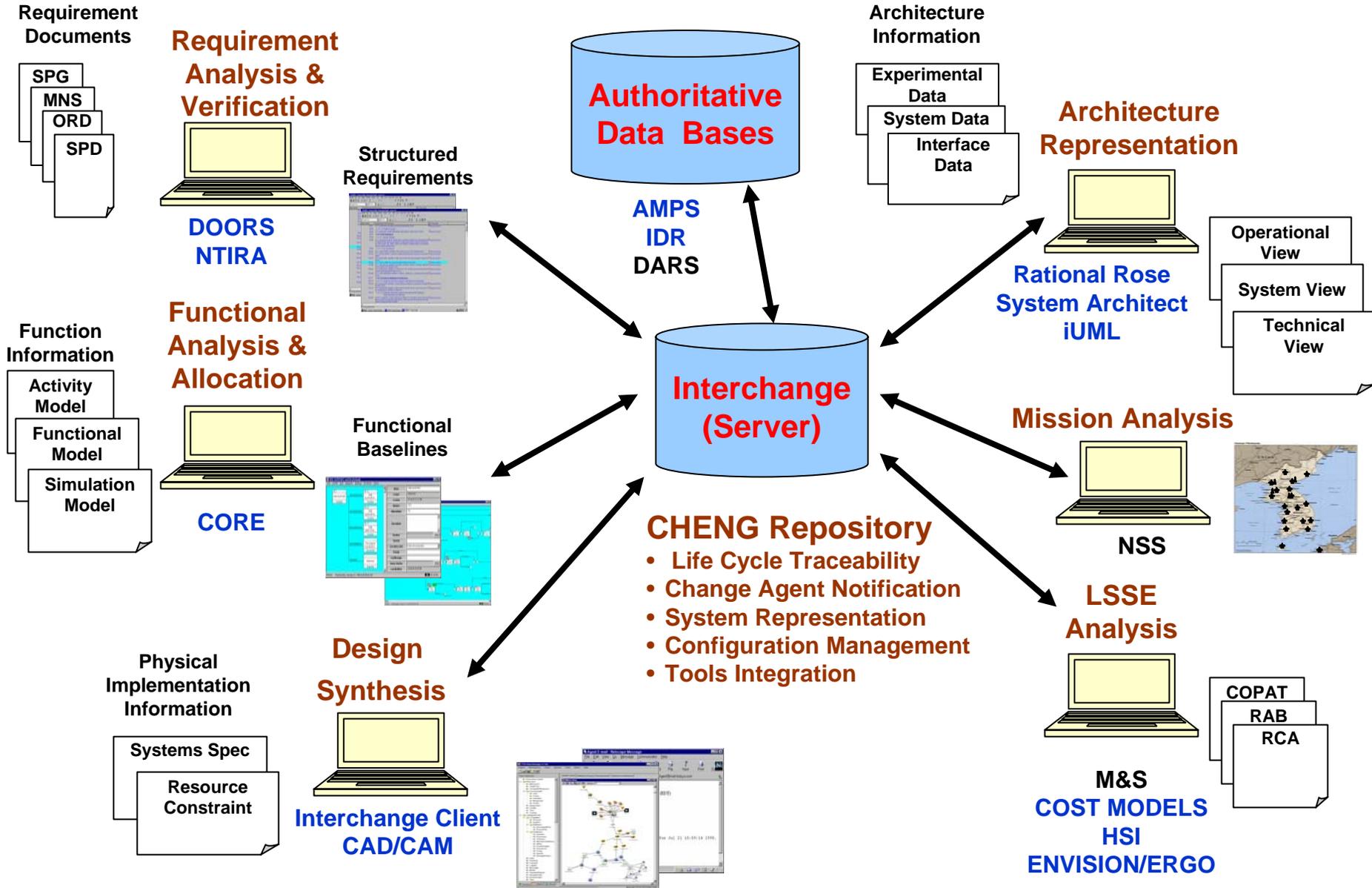
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NCEE Tools/Databases Integration Applications



NCEE IEE Components

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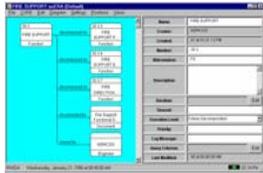




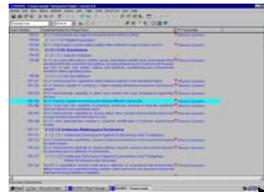
IEE Repository Data View

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Function Analysis
(CORE)



Requirement Analysis
(DOORS)



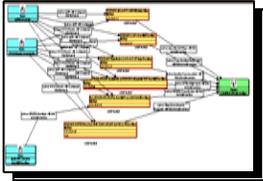
Data Repository Clients
(Interchange)



System Cost
(VAMOSC)



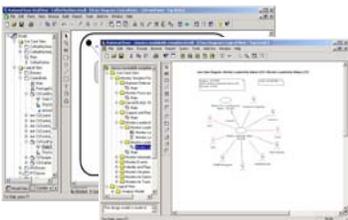
Multi-Warfare
Mission Simulation
(NSS)



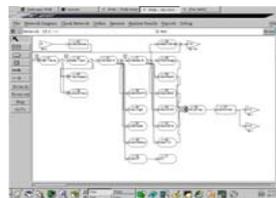
Architectures
(System Arch, DARS)



Object-Oriented Analysis
(Rose/RoseRT)



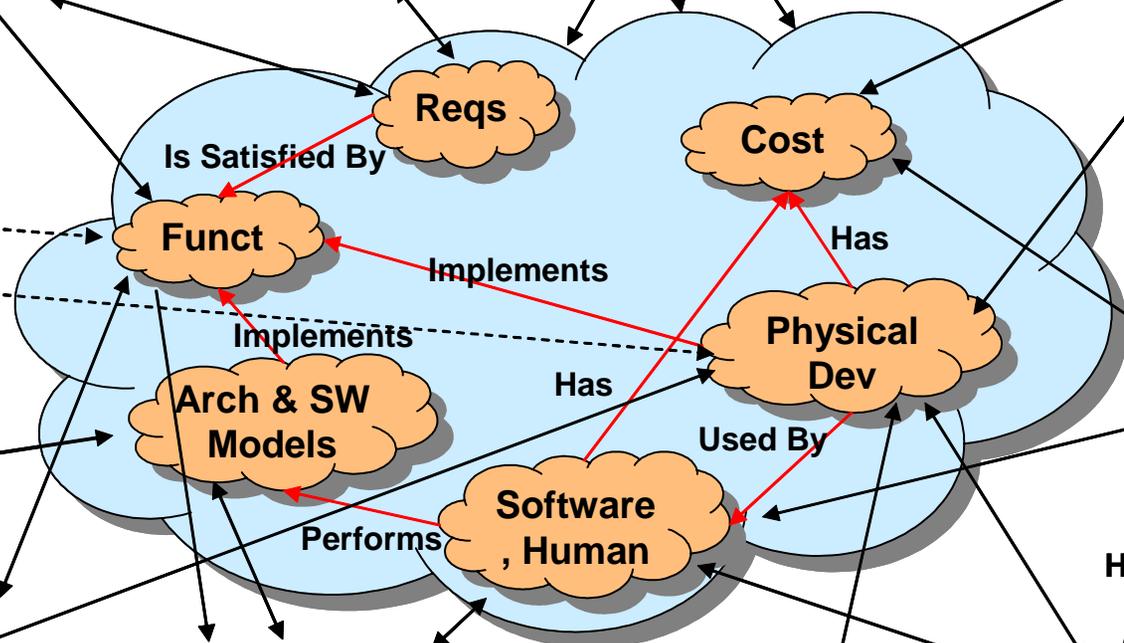
Human Performance
Modeling (IPME)



Manning Cost
(COMET)



Human/Environment
3D Modeling
(ENVISION/ERGO)





Interchange^{SE} Information Repository

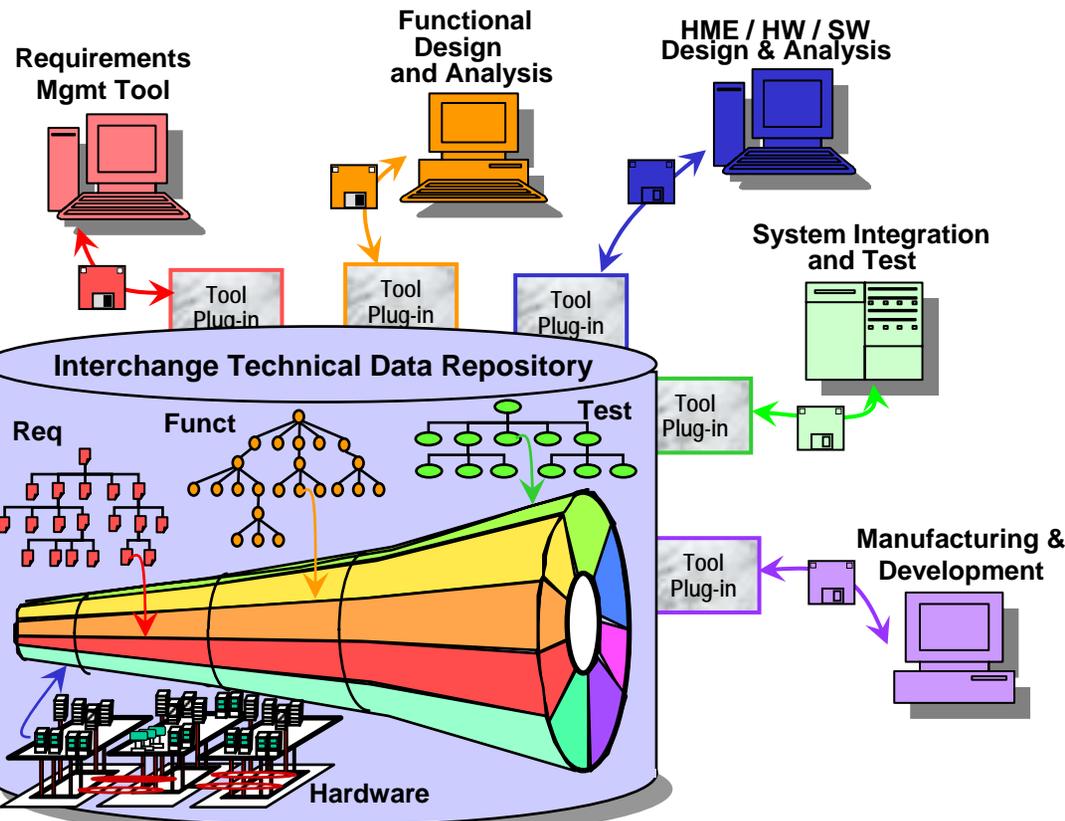
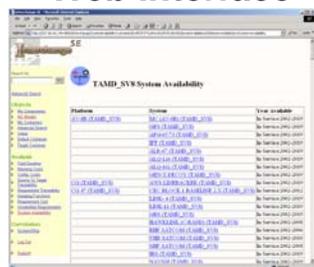
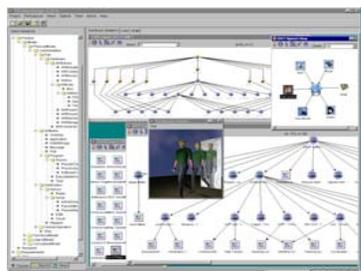
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4 Controlled Secure Remote Access for Distributed Team Members

1 Access to Technical Data from Across the Program

Data Viewer

Web Interface



3 Reports and Analysis Tailored to Program Managements Needs

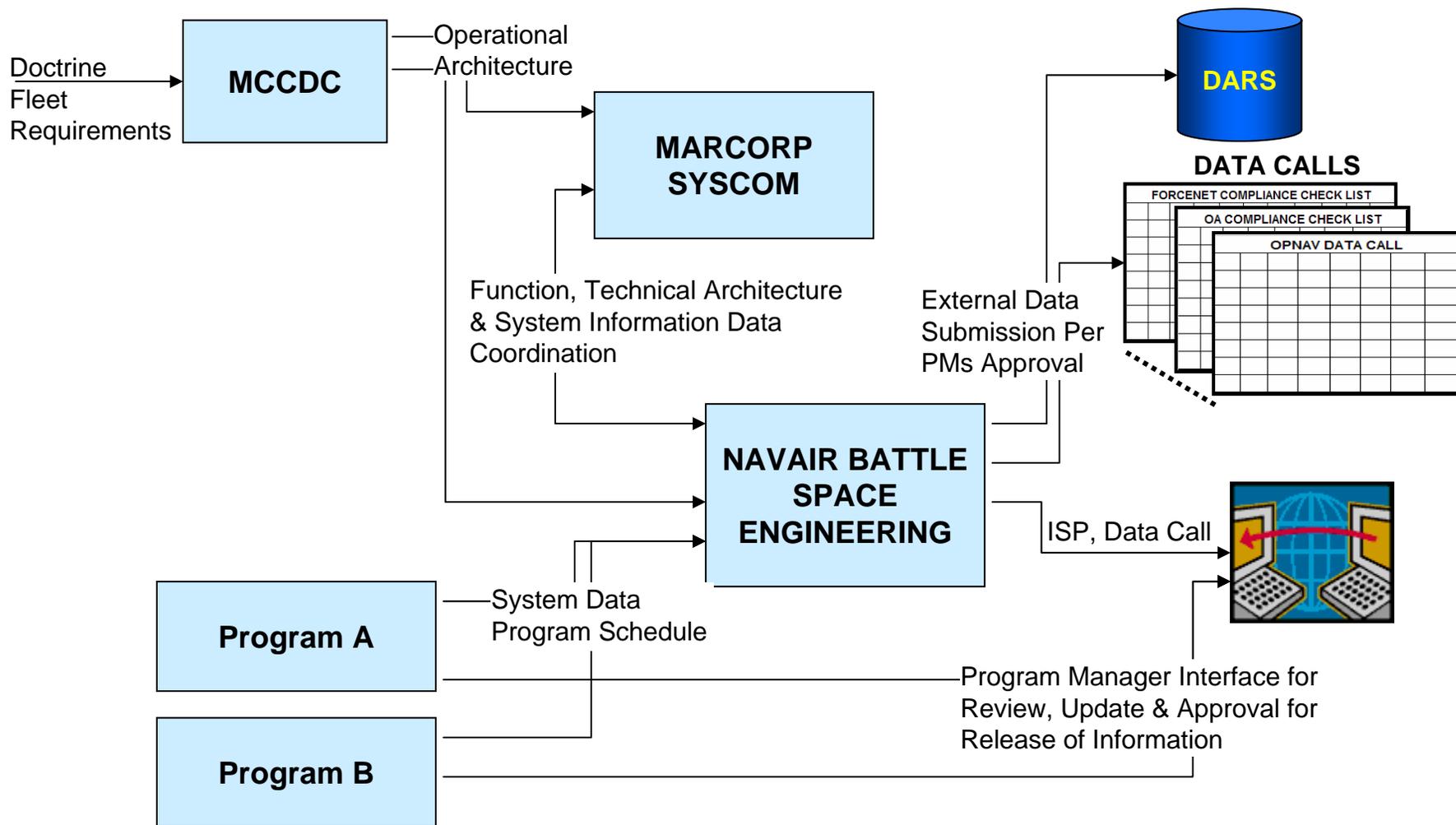
2 Common Repository / Cache with Comprehensive Technical Schema and Bi-Directional Translators for Program Tools

Interchange Integrates Program Data While Enabling Use of Existing and Emerging Tools and Processes



NAVAIR-MARCORP Data Integration Pilot Project

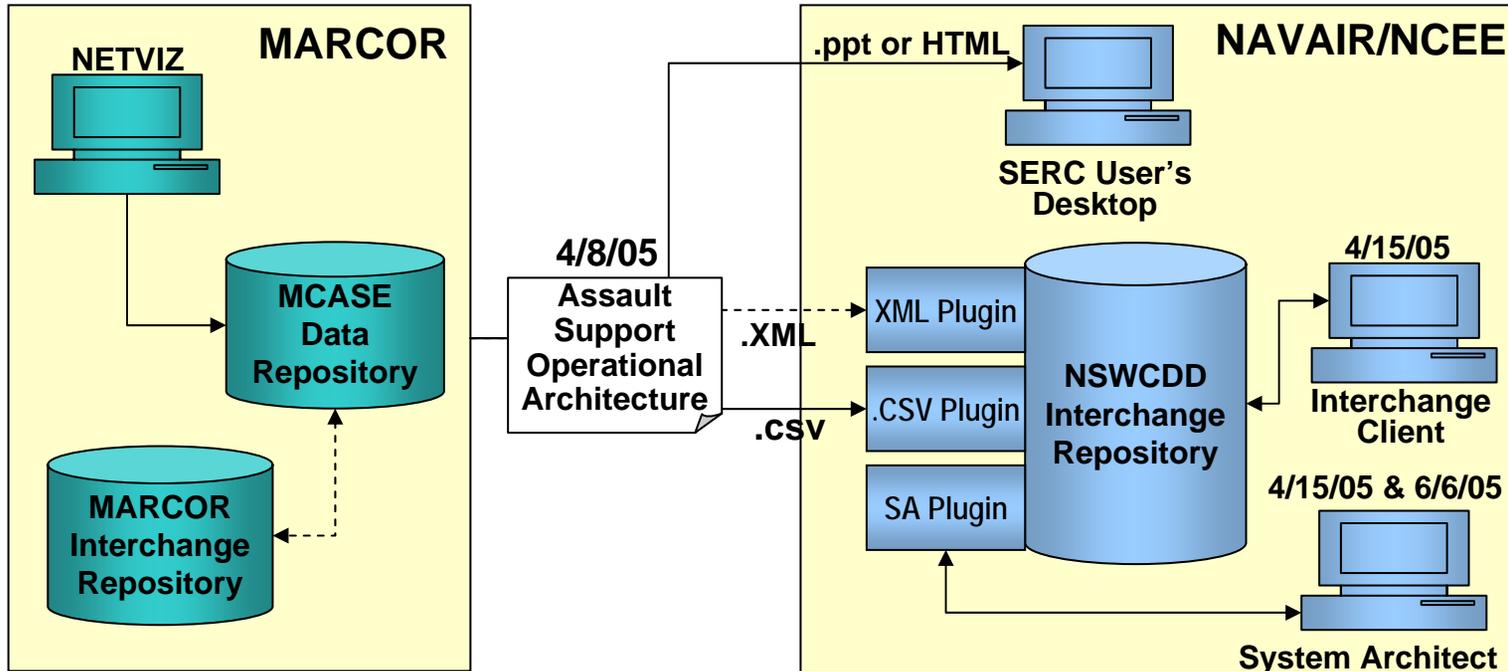
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MCCDC/MCASE – NAVAIR Data Integration Status

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Phase I – April 2005

- Conducted NCEE training
- Successfully executed data exchange mechanism (Netviz Excel format to Interchange to XML System Architect)
- Detected missing data content
- XML format data is not available for testing

Phase II – June 2005

- Defined data requirements for MCCDC
- Conducted a second data pull from MCCDC and made available to NAVAIR in System Architect format



DARS CADM XML Certification

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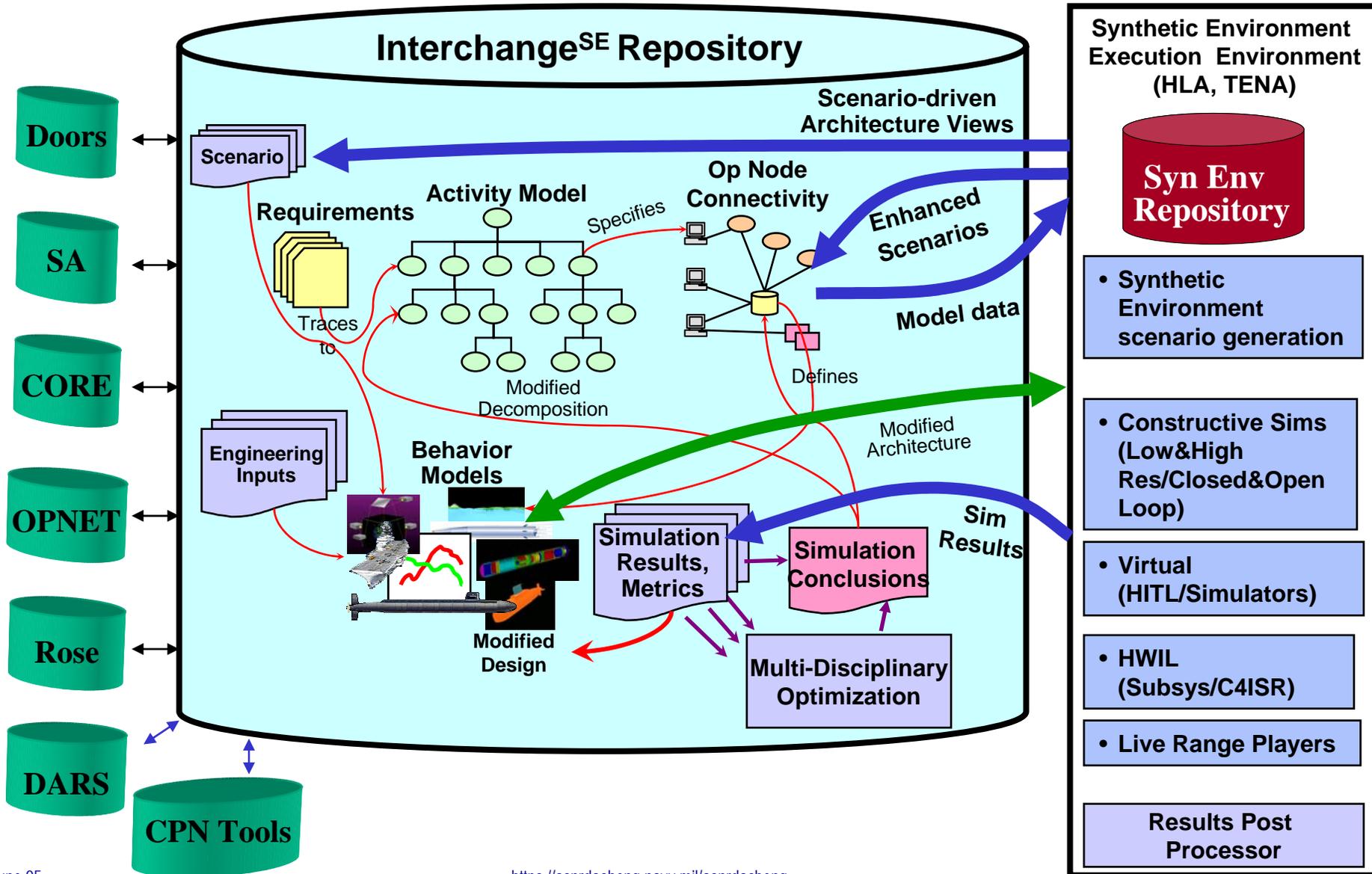
- Phase 1 certification requirements include import/export capability in CADM XML format for AV-1, OV-2, OV-3, OV-5, SV-1 and TV-1
 - NCEE successfully passed OV-5 import/export and OV-2 and AV-1 import
 - Expect to complete phase 1 certification in August

- Phase 2 certification requirements include import/export capability in CADM XML format for AV-1, OV-2, OV-3, OV-5, SV-1, TV-1, AV-2, OV-6c, SV-2, SV-3, SV-4, SV-5, SV-6 and SV-10c
 - The number of tables covered under phase 2 has not been released
 - For the completion of each certification phase, a product is required to cover 434 tables



Integrating Simulation & Analysis Across Acquisition Life Cycle Concept

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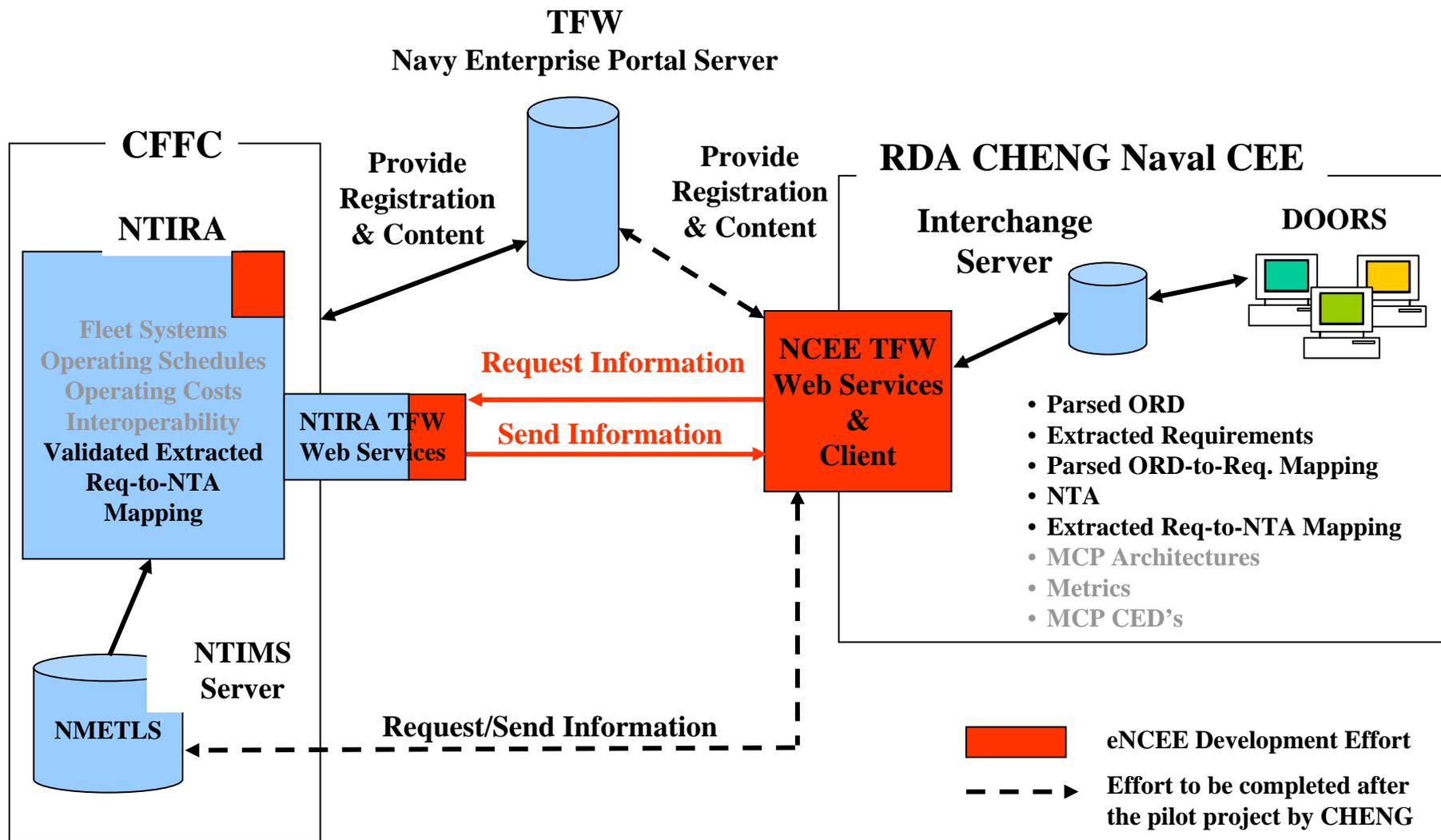


NCEE Web Service / Web Enable Applications



CFFC-NCEE Data Exchange Implementation Concept

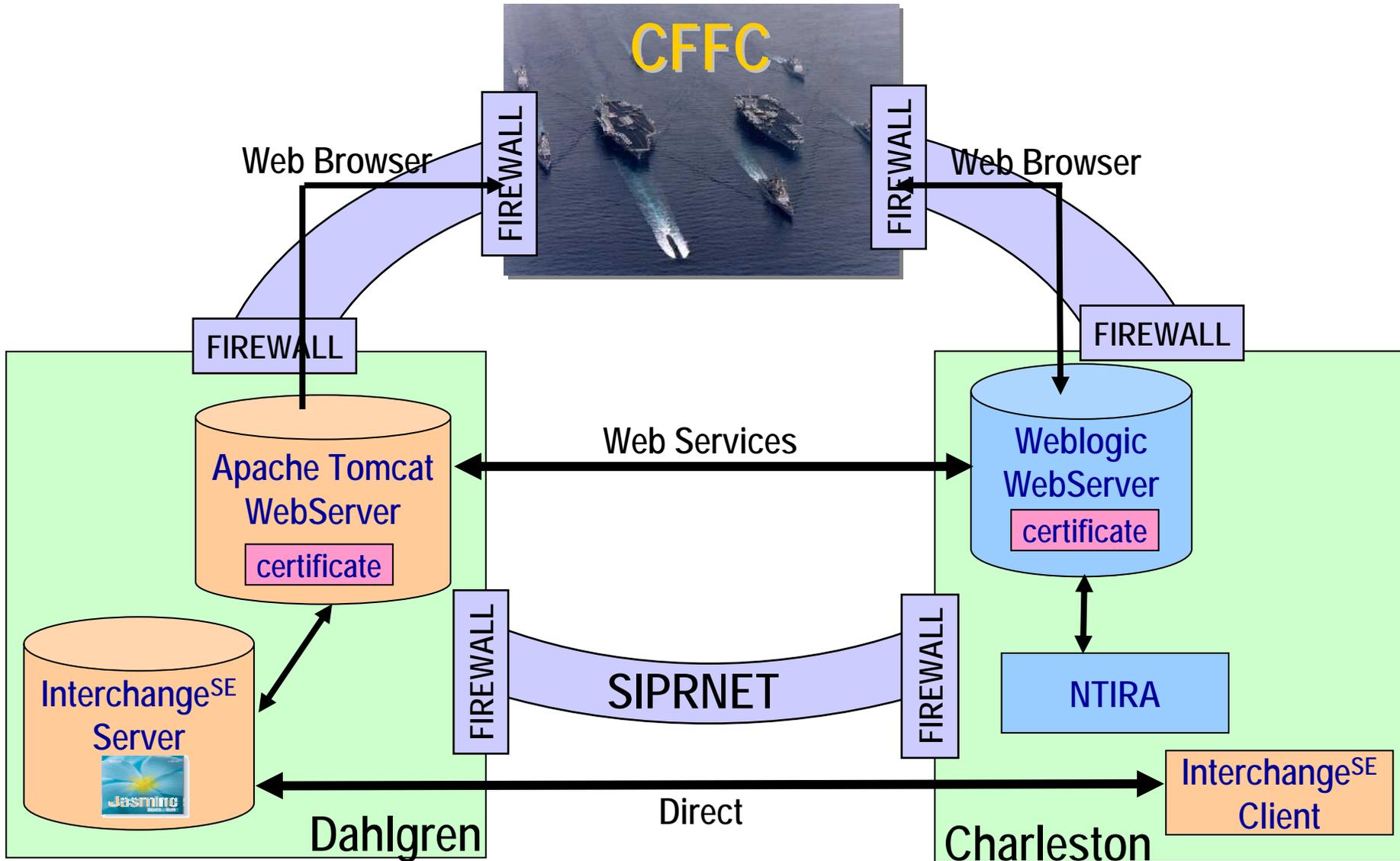
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CFFC-NCEE Data Exchange Physical Connections

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Web Access Example – NCEE CSFL

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Naval Collaborative Engineering Environment

- [Obtain Login](#)
- [View CSFL](#)
- [View Comments](#)
- [Download CSFL](#)
- [Download CM Procedures](#)
- [Download Charter](#)
- [Download Adjudication Matrix](#)
- [Support](#)

Logged In: guest
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Welcome to the RDA CHENG CSFL Website

The DoN Common System Function List (CSFL) includes system functions and associated definitions supporting all aspects of war fighting, combat systems and related C4ISR; logistics and sustainment; and business and enterprise services activities. The CSFL is the SV-4 as described by the DoD Architecture Framework and provides the basis for identifying and assessing operational capability overlaps and gaps between legacy and developmental systems. A single CSFL provides the engineering basis and functional rigidity, within the paradigm of distributed development, to identify integration and interoperability issues within a system or family of systems.

	<u>Phase I</u>	<u>Phase II</u>	<u>Phase III</u>	<u>View Only</u>
Initial Standup (2003-2004)	22 Dec 03 - 30 Apr 04	1 May 04 - 31 May 04	1 Jun 04 - 30 Jun 04	1 Jul 04 - 31 Mar 05



Information Disclosure

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**ASN(RDA) CHEM**
Naval Collaborative Engineering

▶ Main Menu
▶ Support

System Functions

To search tree, 'Expand All' then use your browser's 'Find' feature.

- 1.0 Combat
 - 1.1 Sense
 - 1.2 Command**
 - 1.3 Act
 - 1.4 Interoperate
- 2.0 Sustainment
- 3.0 Business
- 4.0 Enterprise Application Support Services
- 5.0 Enterprise System Services

Definition Source: SIAP



1.2 Command

Definition

Support and perform decision-making processes that effectively and efficiently direct the force(s) under command, and that support employment of offensive and defensive weapons.



Input Submission

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- Support

System Functions

To search tree, 'Expand All' then use your browser's 'Find' feature.

- 1.0 Combat
 - 1.1 Sense
 - 1.2 Command
 - 1.3 Act
 - 1.4 Interoperate
- 2.0 Sustainment
- 3.0 Business
- 4.0 Enterprise Application Support Services
- 5.0 Enterprise System Services

Specify Function Definition and Justification for Adding to the CSFL

Enter Function Definition and Justification Here

Specify Function Location

Insert this new function as

Sibling Child

of the existing function

1.2 Command



Evaluation Disclosure

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Number	Function	Comment Type	Proposed Action	Old Definition	Proposed Definition or Change	Rationale	Recommendation
1.0	Combat	Significant	Change Definition	Directly support combat and mission operations	Provide functionality, environment, and tools to perform efficient management of combat systems. Functions include performance monitoring, fault localization, system recovery, system reconfiguration, and Information Assurance (including security, access controls, physical security, etc).		Do not concur. Recommended definition is not complete and does not accurately match the subfunctions.
1.1.1.1	Search	Administrative	Delete Function.	Observe an area of interest either passively, looking for energy emissions that conform to expected signals of interest, or actively, transmitting energy to detect objects of potential interest.	Search should be deleted and rolled up into 1.1.1 Single Sensor Sense, which should become Search. There is only one 4th level subfunction under 1.1.1, so 1.1.1.1 should be eliminated.		Concur with change.
1.1.1.1	Search	Significant	Change Definition	Observe an area of interest either passively, looking for energy emissions that conform to expected signals of interest, or actively, transmitting energy to detect objects of potential interest.	Observe / sense ambient environment (i.e. water depth, sound velocity profile, salinity) to determine sensor capabilities, range of the day, predict detection / counter-detection probabilities, etc. Observe / sense self-noise and determine vulnerability to counter-detection by expected combatants.		Do not concur. Recommended definition is too specific for "Search."
1.1.1.1.1.2	Process Underwater Signals	Minor	Change Definition	Process underwater signals to filter noise, ECM, and clutter, improve signal-to-interference ratio, amplify, or otherwise improve signals for reception, retransmission, or conversion to another format.	Process underwater signals to filter noise, counter measures, and clutter, improve signal-to-interference ratio, amplify, or otherwise improve signals for reception, retransmission, or conversion to another format.	ECM not meaningful underwater	Concur with change.
1.1.1.1.1.2	Process Underwater Signals	Minor	Global definition change.	N/A	Global document change for signal processing.) Change the phrase "conversion to another format" to "conversion to more tactically descriptive and useful information."		Concur with change.
1.1.1.1.1.4	ECM Signal Recognition	Minor	Change Function Name	Determine existence of ECM within measurements.	Change 1.1.1.1.4 ECM Signal Recognition to Counter Measures Signal Recognition	ECM not meaningful underwater	Concur with change.



Policy Tool Prototype Web Access

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Policy Name

Required Products From Policy

Policy References Related to The Same Product

Policy to Applicability Tool

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[Policies](#) [FAQ](#) [Help](#) [Feedback](#)

Expand All Collapse All

Policy

- SNI 5000.2C POL
 - Product**
 - ADM
 - APB
 - AoA
 - CDD
 - DT & E Report
 - ICD
 - ISP
 - Reference Document**
 - CJCSI 6212.01C - Download Document
 - DoDI 4630.8 - Download Document
 - SNI 5000.2C - Download Document
 - DoDI 5000.2 - Download Document
 - DoDD 4630.5 - Download Document



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NCEE Information Management Applications



Facilitate Navy Wide Data Management and Collaboration

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- Information Management Summit conducted in March 2005
 - Conducted survey on data call issues
 - Identified information management problem domain
 - Established workspace to facilitate discussions
 - Discussion topics
 - Naval collaborative operational process
 - Data collection standardization process
 - Data Taxonomy

- Post Information Management Summit progress
 - Draft Information Management IPT Charter available for review
 - Planning for the second IMS
 - Identifying pilot projects to resolve long and short- term information management issues



Requirements Allocation & Traceability Example

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System Requirements

Integrate system design domains, enforce consistency across design baselines and eliminate engineering stovepipes

Functional Requirements Mapping

System Functions

HW constraints

Functions Mapped to Hardware

Functions Mapped to Software

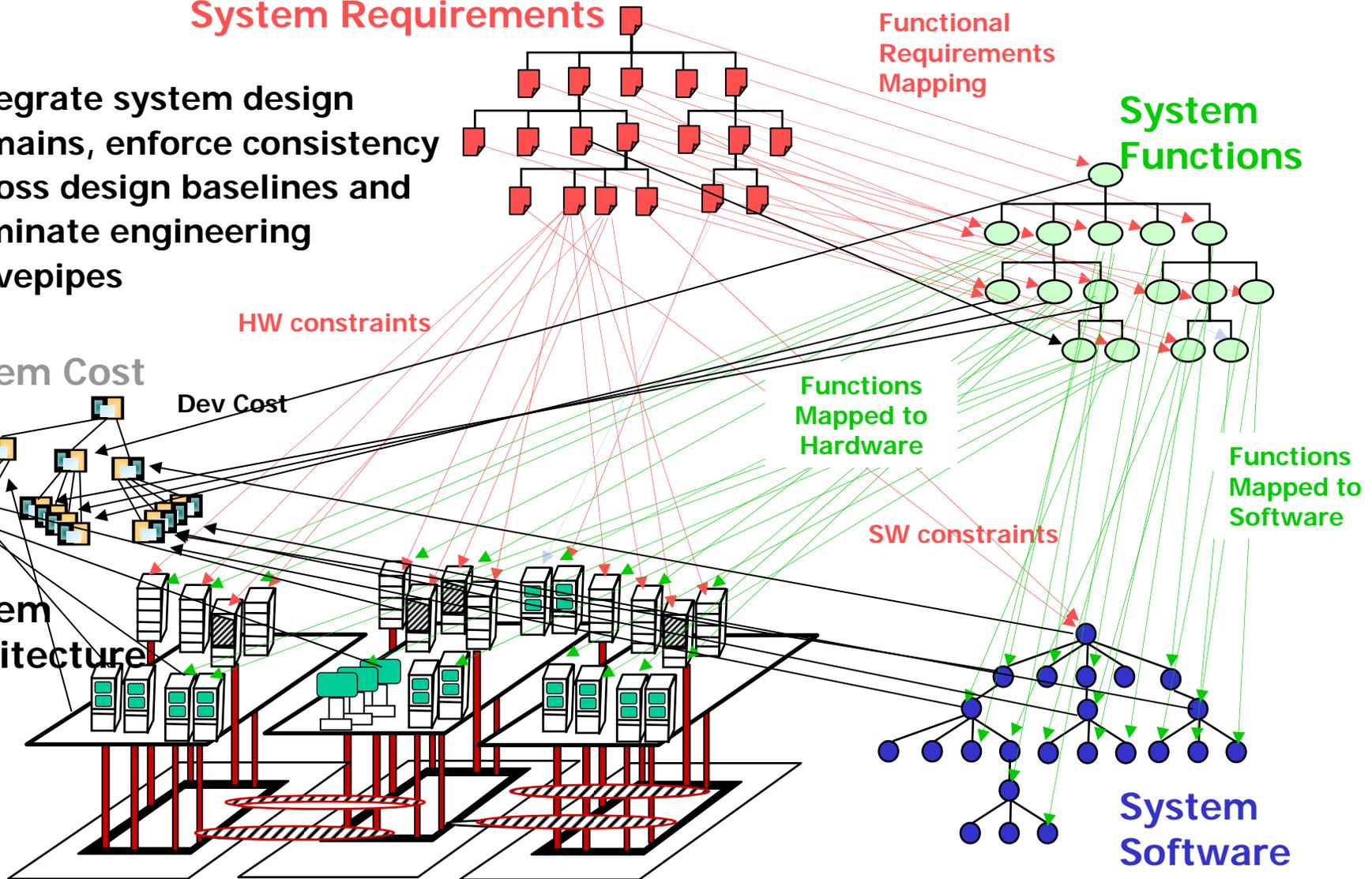
SW constraints

System Cost

Dev Cost

System Architecture

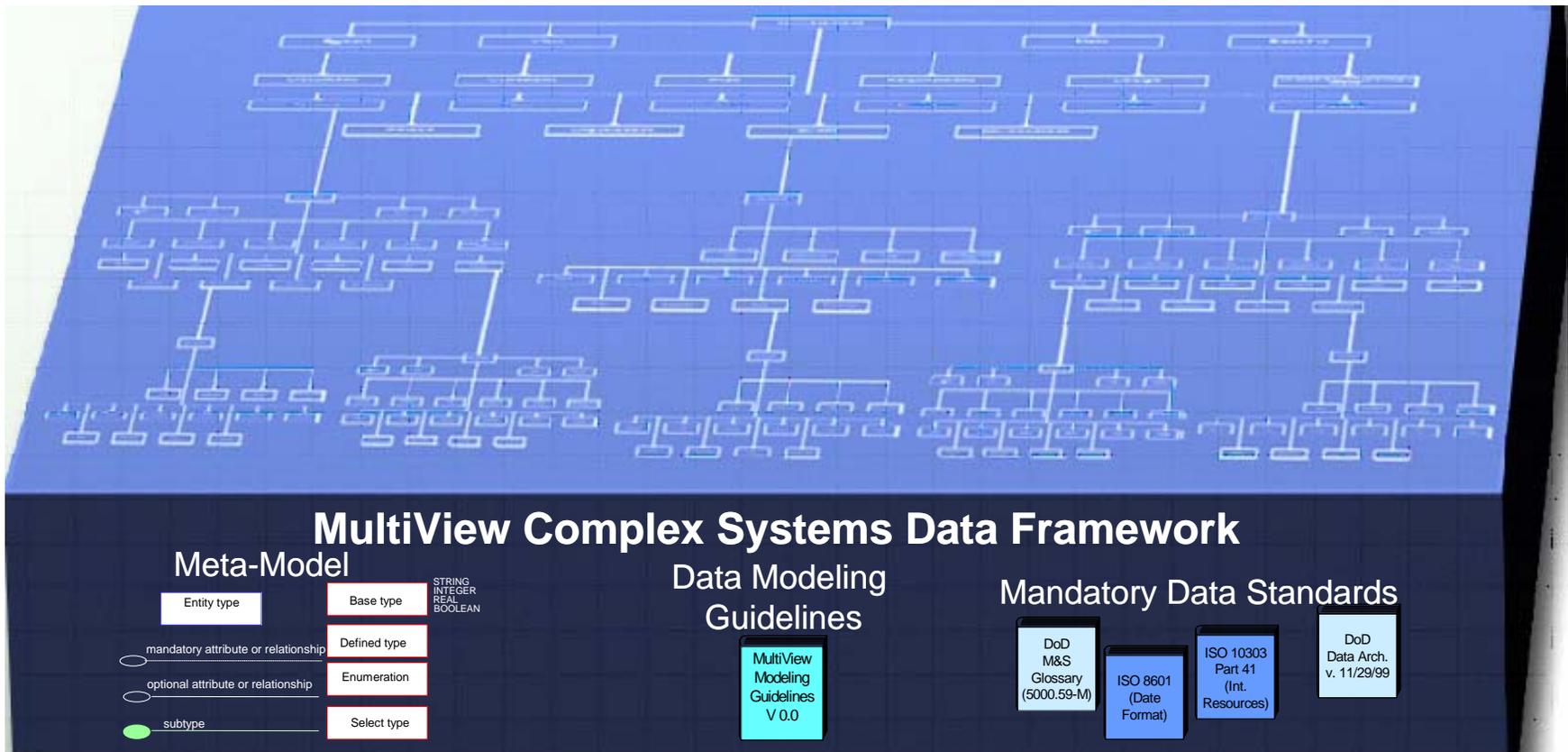
System Software





Schema Development Approach and Key Schema Products

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- **Complex Systems Data Framework**
 - Set data representation boundaries
 - Identify & enforce schema rules

- **Initial DoD Data Schema Subset**
 - Validate framework
 - Pilot Program sample application

A Solid, Standards-Based Foundation Paves the Way for Effective Transition



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NCEE Data / Information Assessment Applications



NCEE Activities Highlight NCEE Supports POM-04 and PR-05

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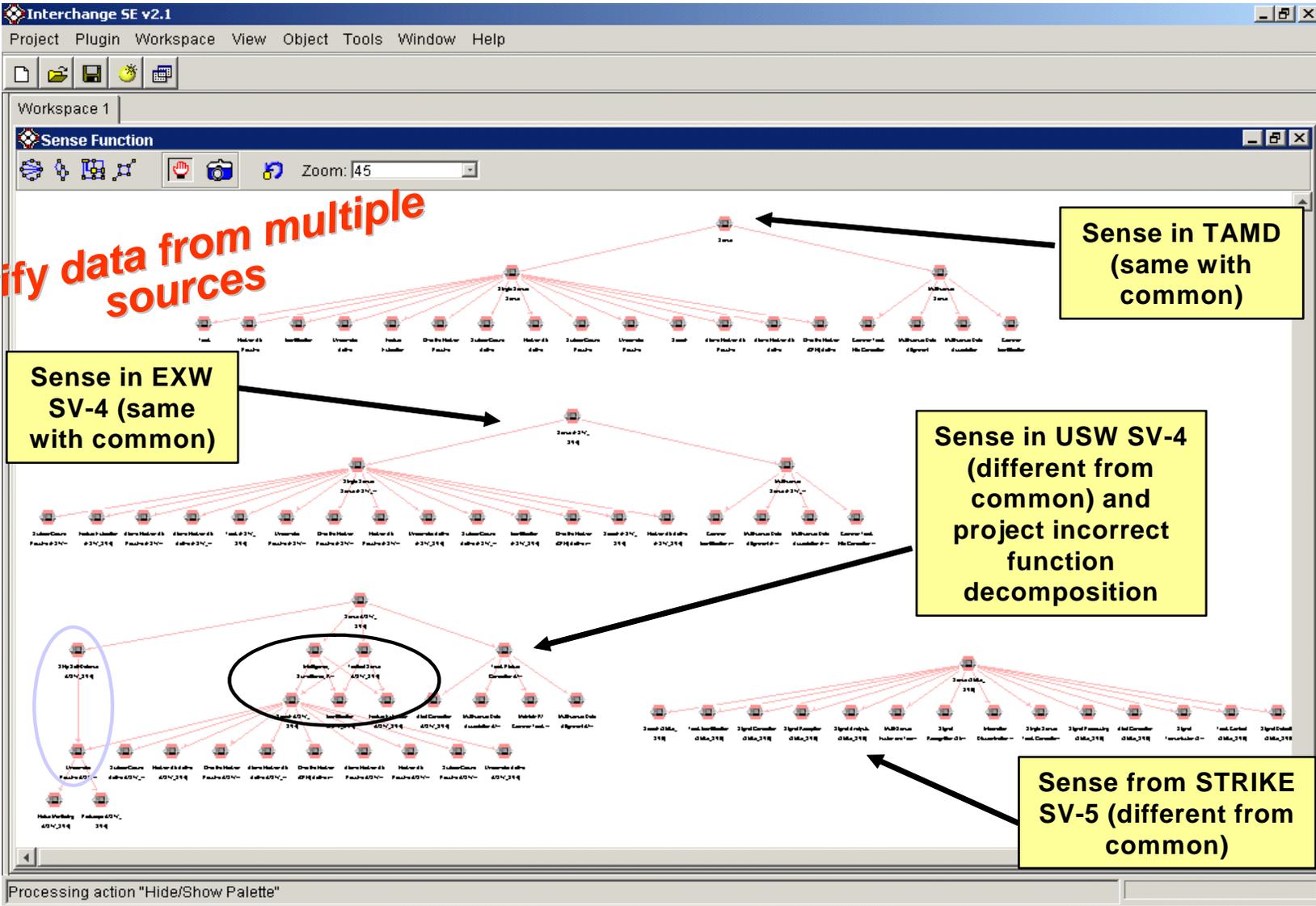
Verify data from multiple sources

Sense in EXW SV-4 (same with common)

Sense in TAMD (same with common)

Sense in USW SV-4 (different from common) and project incorrect function decomposition

Sense from STRIKE SV-5 (different from common)

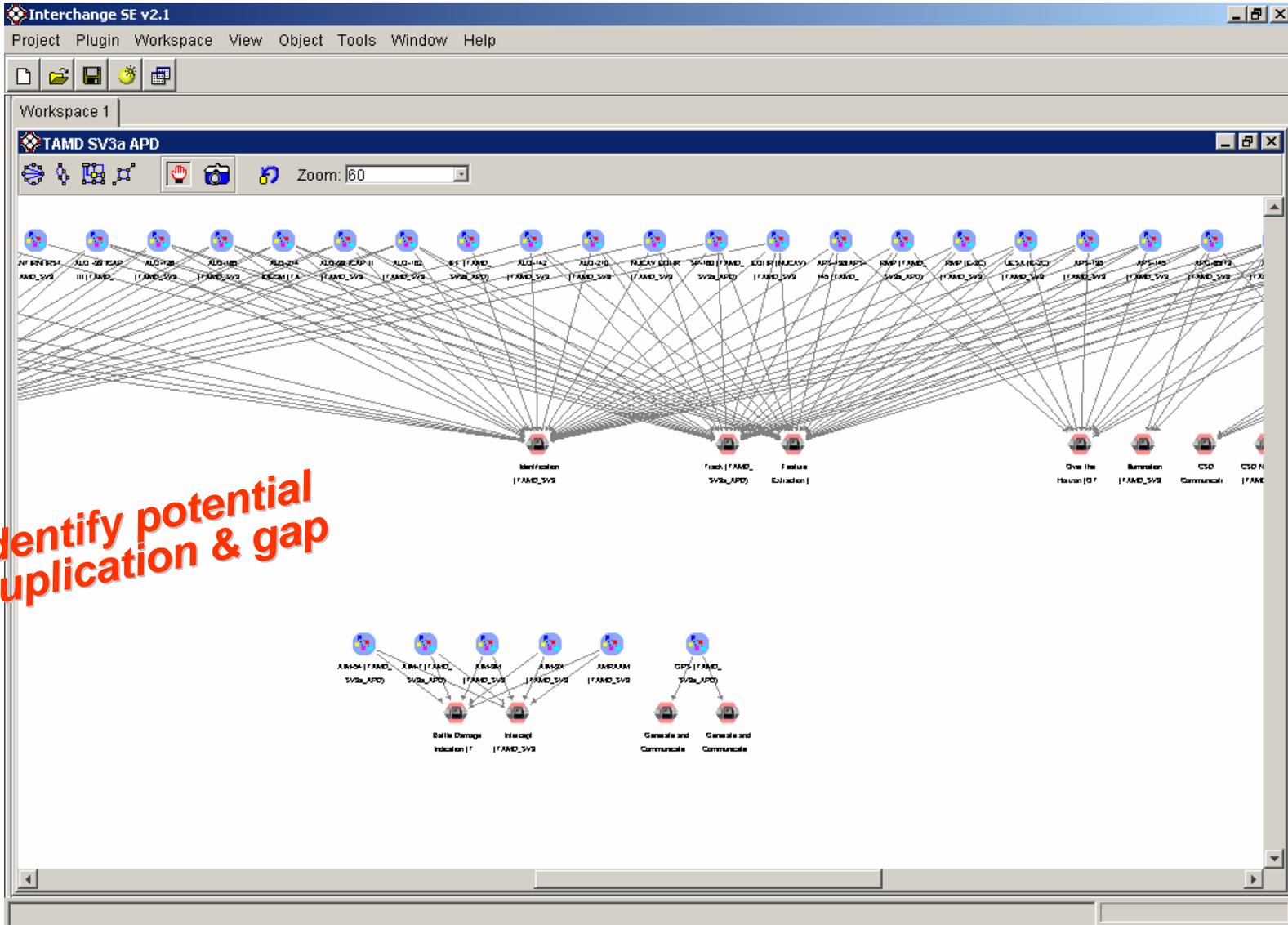


Processing action "Hide/Show Palette"



NCEE Activities Highlight NCEE Supports POM-04 and PR-05

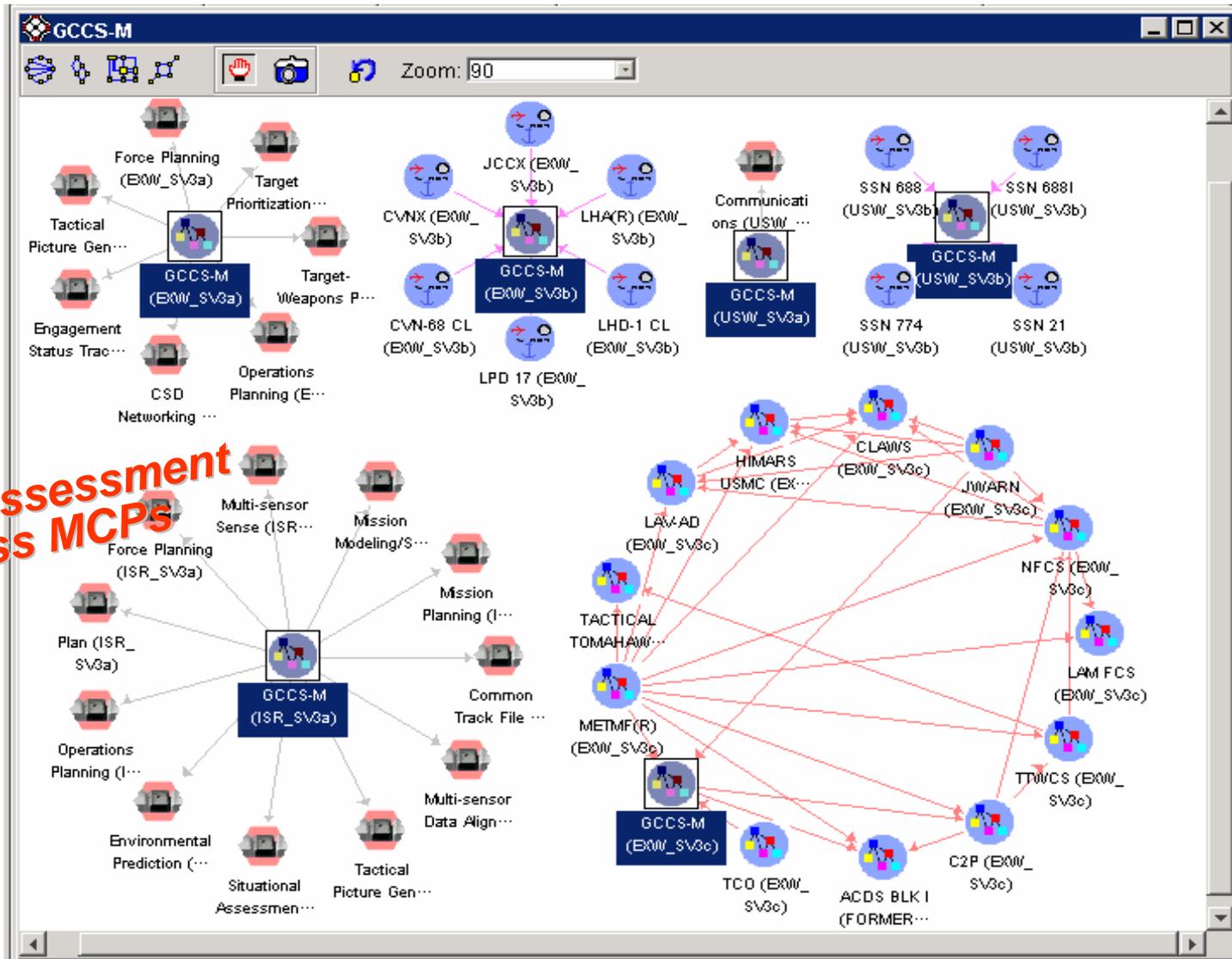
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NCEE Activities Highlight NCEE Supports POM-04 and PR-05

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NCEE Activities Highlight NCEE Supports POM-04 and PR-05

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Web services report

Interchange SE - Microsoft Internet Explorer

Address http://207.86.66.194:8080/Interchange/SystemAvailability?containerID=MPCPF%3A%3A1053%3A1052&yearAvailable=2006&view=table&Go=System+Availability

Interchange SE

TAMD_SV8 System Availability

Platform	System	Year Available
AV-8B (TAMD_SV8)	MC (AV-8B) (TAMD_SV8)	In Service:2002-2019
	GPS (TAMD_SV8)	In Service:2002-2019
	APG-65/73 (TAMD_SV8)	In Service:2002-2019
	IFF (TAMD_SV8)	In Service:2002-2019
	ALR-67 (TAMD_SV8)	In Service:2002-2019
	ALQ-126 (TAMD_SV8)	In Service:2002-2019
	ALQ-162 (TAMD_SV8)	In Service:2002-2019
	GEN-X DECOY (TAMD_SV8)	In Service:2002-2019
CG (TAMD_SV8)	AWS LINEBACKER (TAMD_SV8)	In Service:2002-2019
CG 47 (TAMD_SV8)	CEC BLOCK 1 BASELINE 2.X (TAMD_SV8)	In Service:2002-2012
	LINK- 4 (TAMD_SV8)	In Service:2002-2019
	LINK-11 (TAMD_SV8)	In Service:2002-2019
	GBS (TAMD_SV8)	In Service:2002-2019
	HAWKLINK (C-BAND) (TAMD_SV8)	In Service:2002-2008
	EHF SATCOM (TAMD_SV8)	In Service:2002-2006
	UHF SATCOM (TAMD_SV8)	In Service:2002-2010
	SHF SATCOM (TAMD_SV8)	In Service:2002-2008
	IBS (TAMD_SV8)	In Service:2002-2019
	NAVSSI (TAMD_SV8)	In Service:2002-2019



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NCEE Ongoing Collaboration Efforts



NCEE – Open Architecture Collaboration

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- Support the establishment of a neutral environment that could be used to enable long and short-term OA business areas
- Provide software reuse framework for OA integration
 - Open Ship Gridlock System/Automatic Correlation (SGS/AC) & Aircraft Carrier Tactical Support Center (CV/TSC) software reuse example problem
- Provide web access capabilities for OAET stakeholders to interface with industry
 - OA information and “Questions to the OAET”
 - OA repository for depositing information regarding vendor proposed OA solutions
- Provide workspaces and engineering tool environment for OA Surface Domain
 - Explore cross programs review process
 - Explore OA-FIBL alignment process

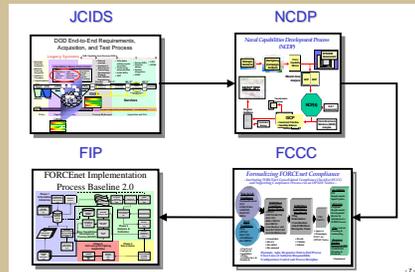


Naval Collaborative Engineering Environment: FORCEnet Implementation Toolset Initiative

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Naval Collaborative Engineering Environment

FORCEnet and Related Processes



FORCEnet Implementation Tools



FIT is an Enterprise Requirements Management Initiative enabled Through the NCEE and Designed to Support Various Naval Processes and to Maximize Use of Existing IM / IT Infrastructure

From FCCC-FIBL Spiral 2 brief, 1 June 05, by Dan Green



NCEE – FIT/FIBL Alignment

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- Two technical exchange meetings were conducted between CHENG-NCEE and SPAWAR05
- Organizations informed each other on existing capabilities, requirements, and alignment objective
- Establishing pilot project to define the processes, data elements, and capabilities improvement for FIT/FIBL
 - E2C is current candidate
 - Pilot program plan is under development
- Identify additional areas of interest for alignment
 - Policy Decomposition Prototype implementation approach as candidate to support FCCC decomposition and traceability
 - Working in concert with SPG director



Other Collaboration Efforts

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■ NCEE – NETWARCOM

- Establishing workspaces to provide collaborative capabilities for NETWARCOM IPTs
- Engaged with NETWARCOM in technology transition. Utilization of Interchange plugin (System Architect and CADM XML) to support the integration and dissemination of operational architecture data is of interest to NETWARCOM

■ NCEE – TTCP

- Defined Pilot Project to understand Coalition Fires process
- Aligned cross-countries operational activity lists
- Presented Coalition Collaborative Engineering Environment at ASNE conference
- Published in INSIGHT Magazine



Points of Contact

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